PILOT ATTITUDES AND BEHAVIORS: A CASE INQUIRY INTO ETHICAL DECISION MAKING AND INCREASED RISK

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This paper considers the relationship of a pilot's personal and professional ethics with levels of risk. Every pilot has a standard ethic by which decisions are made and this ethic may be above, in line with, or below that expected by the aviation industry and the flying public. If the expectations of the industry are appropriate for operating in the safest possible manner, then if one violates that ethic, safety may be compromised and subsequently, risk is increased. In this case inquiry, decision making ethics are examined as they relate to ethical foundations. A practical application will then be made to concept of Standard Operating Procedures. A discussion of the results of a survey about standard procedures will relate this to safety and risk in a training environment.

Introduction

The study of applied ethics is a requisite element in the training of professionals in many fields. Unfortunately, the aviation field is one that has not emphasized the application of ethics to the work environment. There is some thought given to it when the aviation related entity is a business thereby creating a connection with accepted business ethics. Engineering and manufacturing firms have there own individual codes of ethics and these may also be aviation-related. Few other applications of ethics have been developed to assure ethical behavior on the part of pilots when they are acting on the behalf of the public.

The foundations for aeronautical decision-making are established early in a pilot's training program when he/she is training for the Private Pilot Certificate. This paper considers the relationship between the decision to follow standard procedures and risk level. Attitudes and ethics are shown to be important based on a survey of active pilots in a typical training program. Pertinent results from this survey will be reported and an application made to ethical decision making.

Ethical Foundations

Ethics may be defined as the study of how to live well. (Beabout and Wennemann, 1994; MacIntyre, 1998), and has been seriously considered in many different ways in many different societies. The ancient Greeks vigorously studied this concept from several perspectives and did not always come to the same conclusions about ethical behavior. Socrates, Plato, and Aristotle were the essential developers of concepts that are accepted as foundations for human philosophy and ethics. The practical application of these ethical concepts is developed within the field of Applied Professional ethics.

Defining Ethics

A problem for anyone who studies ethical decision making and behavior is to determine what ethics, and ethical decision making, means. Traditionally ethicists have considered various ways to determine the meaning of ethics, and have concluded by asking the question, "What is the good." Some have said that good is defined by the customary standards of the society in which they live. These sophists would say that you cannot ask the question, "What is justice?", without asking "What is justice-at-Athens?" (MacIntyre, 1998) or, to put it more in the present, "What is justice-at-St. Louis." Beabout and Wennemann (1994) call this "Conventional Morality" as opposed to "Egoism." A person who is an egoist determines the good by first deciding what is the best action for the self. In other words, what is best for me is the best action for everyone. This is sometimes expressed as, "If I take care of myself, then the others on board will be OK as well."

A third broad category for ethical thinking is generally classified as "Utilitarian Thinking"(Beabout and Wennemann, 1994; MacIntyer, 1998; Harris, Pritchard, and Rabins, 2000). This approach defines the greatest good as that behavior which benefits the greatest number of people. There are three approaches consistent with the utilitarian view of ethics.

- *Cost/Benefit Approach* -Risks and benefits defined as a quantifiable entity (Harris, Pritchard and Rabins, 2000. Waldavsky (1988) calls this the Principle of Irreducible Certainty.
- *Act Utilitarian Approach*-The consequences of a decision should be greatest good for the greatest number of people.
- *Rule Utilitarian Approach*- a general set of rules and regulations guide the behavior of the whole group. (Harris, Prichard, and Rabins, 2000; Beabout and Wennemann, 1994).

Immanuel Kant was a giant in the development of modern ethics and seems to subscribe to the view that duty is the overriding standard. He says nothing is unconditionally good – except a good will. So motives and intentions are of supreme importance and make the good will good. The result of this is

that the "good" is for the good will to do its duty for the sake of doing its duty (MacIntyre, 1998). This works, according to Kant, because a moral imperative is universalized to the whole and can be applied consistently. When it is applied universally it works for the good of all. Any imperative that does not universalize to the whole and work for the good of all would not be ethical according to this construct.

Another classification described by Beabout and Wennemann is that of Virtue Ethics where certain virtues are defined as those that develop character in a human. This character leads to self-actualization and outwardly directed concern for social institutions and human relationships.

These broad categories of ethical theories provide a foundation for developing a practical approach to professional ethics as applied to the various elements of the aviation industry. Safety is stressed to the student from the beginning of training so the certificated pilot will continually think about his own safety along with that of his passengers. The question that may be asked is, "How safe is this particular pilot?" Are there ways to evaluate decisions and behaviors that would be safe, not-so-safe, or unsafe. Engineers are taught to "design in" a factor of safety for a public structure. This emphasis is begun early in the training process and a factor of six is usually the norm. This means that a walkway would be designed to six times stronger than that required for normal use and would provide allowances for unpredictable events and construction materials (Harrris, Pritchard, and Rabins, 2000).

All of these approaches to the understanding of ethical foundations have some connection to piloting activities, and each of them has limitations as well. It seems that the *Rule Utilitarian Approach* may be the best one to apply. The aviation industry is a rule-driven one and pilots are trained with this in mind from the beginning. The Federal Aviation Regulations are complex and specific about certain activities that are acceptable as well as those that are unacceptable. These regulations are designed to provide a safe environment for all flying activities. As extensive as these FARs are, they do not cover every possible situation. To fill this gap, companies are expected to develop and implement Standard Operating Procedures. These SOPs serve as the guide for operating a specific aircraft in a specific situation. SOPs are typically written to fit the mission of the company to provide safe transport of all concerned. There may be fare-paying passengers in the case of airline or air taxi operations. It may be to assure the safety of the company employees if flying is an integral part of the business. And it may include students in a flight training environment.

The issue under consideration here is compliance with these Standard Operating Procedures. What happens when a pilot or a crew does not follow the accepted and approved SOPs? It may be that they make an honest mistake and through the nature of being human perform erroneously. On the other hand, the pilot or crew may decide not to follow the accepted and approved SOPs. The willful neglect or change of an SOP will happen when a decision is made. This decision then becomes an ethical decision since it is going against previously accepted procedures.

Standard Operating Procedures

On August 16, 1987 Northwest Flight 255 attempted a takeoff from Detroit Metropolitan Wayne County Airport. The takeoff was unsuccessful and the McDonnell Douglas DC-9-82 crashed into a rental car company. . The NTSB concluded that "the probable cause of the accident was the flight crew's failure to use the taxi checklist to ensure that the flaps and slats were extended for takeoff. Contributing to the accident was the absence of electrical power to the airplane takeoff warning system which did not warn the flight crew that the airplane was not configured properly for takeoff" (NTSB/ARR-85/05, p. v).

The issue of this accident that relates to this paper is the suggestion by the NTSB that standard operating procedures were not followed by this flight crew. The use of standard operating procedures is accepted throughout the industry as the way to manage all aspects of a particular flight. SOPs are used to manage all operations, including equipment maintenance, flight preparation, flight operations, and pilot standardization. Airline training programs emphasize the absolute necessity of adhering to these standard procedures so that the flight will be accomplished with the good of the passengers as top priority. Safety can only be assured when SOPs are followed.

The investigation of the accident included an effort by the NTSB to understand and explain why the flight crew did not complete the TAXI checklist. The completion of this checklist and the subsequent configuration of the airplane for takeoff are to be accomplished during taxi when a number of intervening events can occur. A runway change occurred during this time for flight 255 so a distraction was inserted into the situation. It is not uncommon for experienced and capable flight crews to have additional issues to consider when preparing for takeoff, but the crew of Northwest Flight 255 did not manage the configuration of the aircraft so that all was set and ready to go. In fact the checklist sequences had not been followed even from the time of taxiing to the gate after the previous flight. That breakdown in checklist use continued into the preparation phase for takeoff on the subsequent flight.

The NTSB reported that the records for the flight of this crew into Detroit along with the preparations for the departure indicate that numerous standard

operating procedures were not followed and therefore their performance was "below the standards of an air carrier flight crew" (p.60). There was no indication from the NTSB that this type of undisciplined behavior was common among other flight crews in this or other national air carriers. A recommendation was made to implement a strategy to emphasize the importance of good cockpit discipline and checklist use.

Why were the captain and first officer not as disciplined as they should have been? The company's operating procedures were in place and they were trained regarding the standard use of them. Did they decide that these SOPs are not important enough to make sure they are followed correctly? Perhaps they had done these procedures so often that they began to feel so comfortable that some attention to detail was inadvertently diminished.

Patankar, Brown, and Treadwell (2004) describe the phrase, "normalization of deviance" coined by Vaughn (1996). The core of this idea is that it is easy to drift from performing the standard operating procedures as required by the company or by regulation. When this drift continues without negative consequences the result is that a new and different standard (at least in the mind of the performer) is established. This becomes the normative behavior because no one is challenging it and it becomes the "way we have always done it." Perhaps a new standard had been established with the Northwest 255 crew. Even though the NTSB reported that nothing was found that indicated that this practice was prevalent with other Northwest crews nor with air carrier crews in general, there is still a question as to how one particular flight crew performed in this way. The FAA responded by increasing the emphasis on proper checklist use in all levels of flight instruction.

This emphasis by the FAA may be an appropriate way to emphasize the proper use of the checklist, however it does not attend to the questions about why a pilot or crew would allow the degradation of the performance of standard procedures to occur. Is it simply undisciplined flying? Or, could it be that a captain just simply decides that the SOPs are not the best way to perform the functions of the flight? In this case, he/she will be the determiner of the appropriate procedures rather than using those written by the company and approved by the FAA. It seems that there is more involved here than just following regulations. The ethic of the decision not to follow SOPs seems crucial to the idea of normalization of deviance.

The idea of ethical decision making is applicable to all levels of the aviation training environment. Patankar and Northam (2003) studied the compliance of flight school students to the prescribed standard operating procedures of the school. Flight students were surveyed with the intent to measure safety attitudes and behaviors. Of particular interest was the measurement of procedural compliance for these students. It was found that 80-90% of the flight students reported that they consistently adhere to procedural requirements established by the training school. This means that 10-20% are not consistent in following those standard operating procedures, however 89% believed that the school had adequate checks and balances to assure compliance. The conclusion then is that a significant percentage (up to 20%) of the students surveyed may decide not to comply. It is this decision-making ethic that relates to the level of risk established at any flight training school. When more students decide not to follow the rules, a higher risk for an incident or accident is the result. The analysis of one particular question specifically applies to the ethics of decision making. The survey question sought responses regarding the student's position on whether procedures should be followed at all times. Sixteen percent of the respondents indicated that they are likely to violate the standard operating rules, especially if they think that such a violation is in the best interest of the organization (Patankar and Northam, 2003).

Discussion

The use of standard operating procedures for defining the safe and efficient way to conduct flight operations has been established for a number of years. A pilot operating in the system is expected to accept this as normative behavior and practice it on a daily basis. This behavioral ethic is based on the general ethical principle that this operation will be accomplished for the good of those involved. This holds the safety of the passengers as the preeminent goal of any flight. The safe operation of the flight will ultimately mean a better system to be utilized by a broader spectrum of the population. When a pilot chooses to ignore or change standard procedures, he/she is making an ethical decision placing the values defined by "the self" as more important than the established standards of operation. If these standards are the safest way to operate, then a decision to change them would result in a less safe operation and therefore more risk. When a student pilot chooses to violate the training school's rules, he/she is creating a higher risk for the school and diminishing the margin of safety that is built into the standard operation procedures.

Conclusion

This paper suggests that further study needs to be conducted regarding the definition of operational ethics and its application to a safe flying environment. Does an operational ethic require more knowledge, more will, or more of another quality yet to be defined?

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